

WHAT IS CLAIMED IS:

- 1 1. An electrical fuse comprising:
2 a cathode doped with a first impurity of a first conductivity type;
3 an anode doped with a second impurity of a second conductivity type;
4 one or more links electrically coupling the cathode and the anode, each link having a first
5 portion and a second portion, the first portion being doped with the first impurity, the second
6 portion being doped with the second impurity, one or more p-n junction diodes being formed at a
7 junction between the first portion and the second portion; and
8 a conductive layer over the p-n junction diodes.
- 1 2. The electrical fuse of claim 1, wherein the first impurity is a p-type impurity and the
2 second impurity is an n-type impurity.
- 1 3. The electrical fuse of claim 1, wherein the conductive layer is a silicide.
- 1 4. The electrical fuse of claim 1, wherein the conductive layer is less than 500 Å in
2 thickness.
- 1 5. The electrical fuse of claim 1, wherein the conductive layer is a material selected from
2 the group consisting essentially of titanium silicide, cobalt silicide, nickel silicide, platinum
3 silicide, and a combination thereof.
- 1 6. The electrical fuse of claim 1, wherein the cathode, the anode, and the links comprise
2 polysilicon.

1 7. The electrical fuse of claim 1, wherein the cathode, the anode, and the links are less than
2 2500 Å in thickness.

1 8. The electrical fuse of claim 1, further comprising one or more contacts electrically
2 coupled to the cathode and one or more contacts electrically coupled to the anode.

1 9. The electrical fuse of claim 1, further comprising a first contact array comprising a
2 plurality of contacts electrically coupled to the cathode, and further comprising a second contact
3 array comprising a plurality of contacts electrically coupled to the anode.

1 10. The electrical fuse of claim 1, wherein the cathode and the anode are symmetric.

- 1 11. A method of forming an electrical fuse, the method comprising:
2 forming a cathode, an anode, and one or more links interconnecting the cathode and the
3 anode on a substrate, each link having a first portion and a second portion;
4 doping the anode with a first impurity;
5 doping the first portion with the first impurity;
6 doping the cathode with a second impurity;
7 doping the second portion with the second impurity; and
8 forming a conductive layer on the links over junctions between the first portion and the
9 second portion.
- 1 12. The method of claim 11, wherein the first impurity is a p-type impurity and the second
2 impurity is an n-type impurity.
- 1 13. The method of claim 11, wherein the conductive layer is a silicide.
- 1 14. The method of claim 11, wherein the conductive layer is less than 500 Å in thickness.
- 1 15. The method of claim 11, wherein the conductive layer is a material selected from the
2 group consisting essentially of titanium silicide, cobalt silicide, nickel silicide, platinum silicide,
3 and a combination thereof.
- 1 16. The method of claim 11, wherein the cathode, the anode, and the links comprise
2 polysilicon.
- 1 17. The method of claim 11, wherein the cathode, the anode, and the links are less than 2500
2 Å in thickness.

1 18. The method of claim 11, further comprising one or more contacts electrically coupled to
2 the cathode and one or more contacts electrically coupled to the anode.

1 19. The method of claim 11, further comprising a first contact array comprising a plurality of
2 contacts electrically coupled to the cathode, and further comprising a second contact array
3 comprising a plurality of contacts electrically coupled to the anode.

1 20. The method of claim 11, wherein the cathode and the anode are symmetric.